North Inlet-Winyah Bay NERR Poster Supplement

Some Background Information

An **estuary** forms where fresh water from land flows into the ocean. Brackish water is a mix of this fresh water and the salt water from the ocean.

A **watershed** is an area of land that drains into one main river, stream, or other body of water. Winyah Bay estuary originates in the mountains of North Carolina, and it is the third largest estuary on the East coast.

Tips for Image Interpretation

The image at right is a mosaic of digital aerial photographs collected by the National Aerial Photograph Program. This is called a "false-color" image because the colors have been changed to make it easier for people to study. Healthy vegetation appears red. The grasses in the salt marsh are flooded with water during high tide, so they appear dark gray-green or blue in this image. Areas covered with asphalt, concrete, mud, or sand appear bright white.

About North Inlet & Winyah Bay

Winyah Bay (1) estuary begins at the confluence of four major rivers: the Waccamaw (2), the Black and Pee Dee (3), and the Sampit (4). The entrance to Winyah Bay is maintained and protected by two jetties (5), rock walls that jut into the ocean over 3 miles. You can see the effect of jetties in this image, as the water between them is darker, meaning it is deeper and less laden with sediment (6). Winyah Bay is bordered by thousands of acres of formerly cultivated ricefields (7). The irrigation ditches, seen in the image as unnaturally straight creeks, were used to periodically flood the fields between the early 1700s and early 1900s. Dotting the bay are many marsh islands (8), home to alligators, migrating birds, bald eagles, and osprey. The geologic history of this region can even be seen from the air, in the form of beach ridges (9) and barrier islands. The ridges used to be sand dunes, deposited by storms and wind. Over millions of years, the coastline advanced, ridge by ridge, until the beaches we see today were formed. The former beach ridges are now covered with trees, but the soil beneath them is very sandy. A barrier island (10, 11) is formed by the build-up of sand by waves, winds, tides, currents and storms. Most of the currents along the southeastern coast drift southward, so barrier islands erode on the north end and build up to the south as the sand is redeposited. Spits (12) are formed when the southern end of a barrier island forms an extended "hook" that catches more and more of the shifting sand.

The North Inlet estuary (13) forms a salt marsh (14) behind the barrier islands. The tidal creeks receive large volumes of ocean water that flow into and out of the marsh twice daily. These tidal creeks are nursery grounds and home to many shrimps, crabs, and fish. The creeks are interspersed with mud flats, oyster reefs, and acres of salt marsh cordgrass.

The land around North Inlet and Winyah Bay has many different uses. Some areas are highly developed, or urbanized, like the city of Georgetown (15). Other areas are less developed, but this part of the state is very popular for golf courses and resort communities (16). Fortunately, much of the North Inlet watershed is protected from development. Huge stands of upland forest (17) are still home to deer, wild pigs, birds, and even black bears and bobcats.

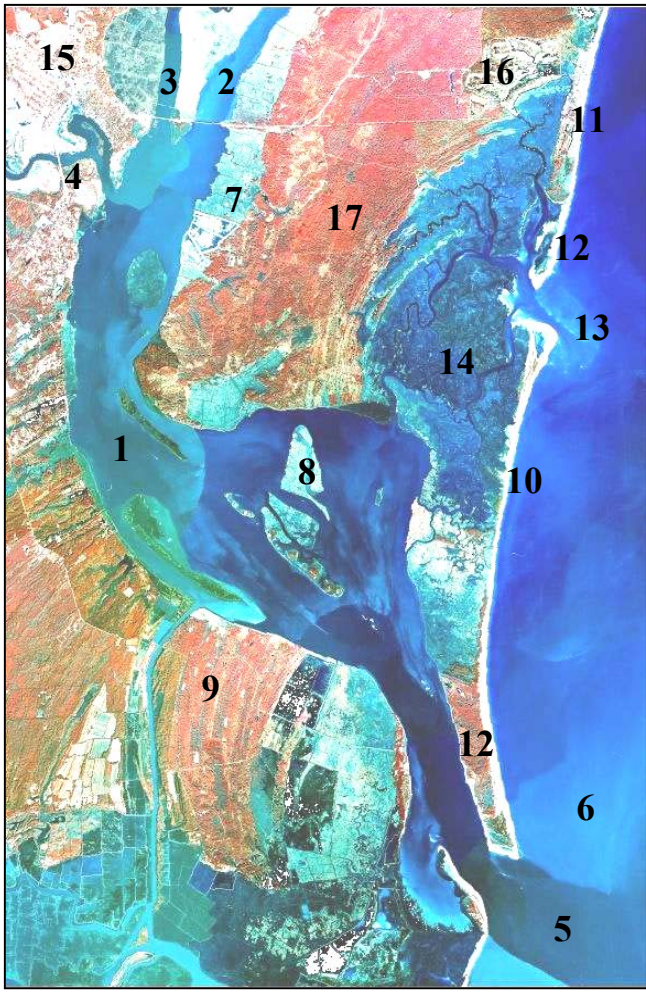

Image Key

1. Winyah Bay
2. Waccamaw River
3. Black & PeeDee Rivers
4. Sampit River
5. Jetties
6. Sediment
7. Ricefields
8. Marsh Islands
9. Beach Ridges
10. North Island
11. Debidue Beach
12. Spit
13. North Inlet
14. Salt marsh
15. Georgetown
16. Golf / resort
17. Forest